EPA and Homeland Security

EPA Roles in Homeland Security

(1) Hazardous materials emergency response

(2) protecting water infrastructure

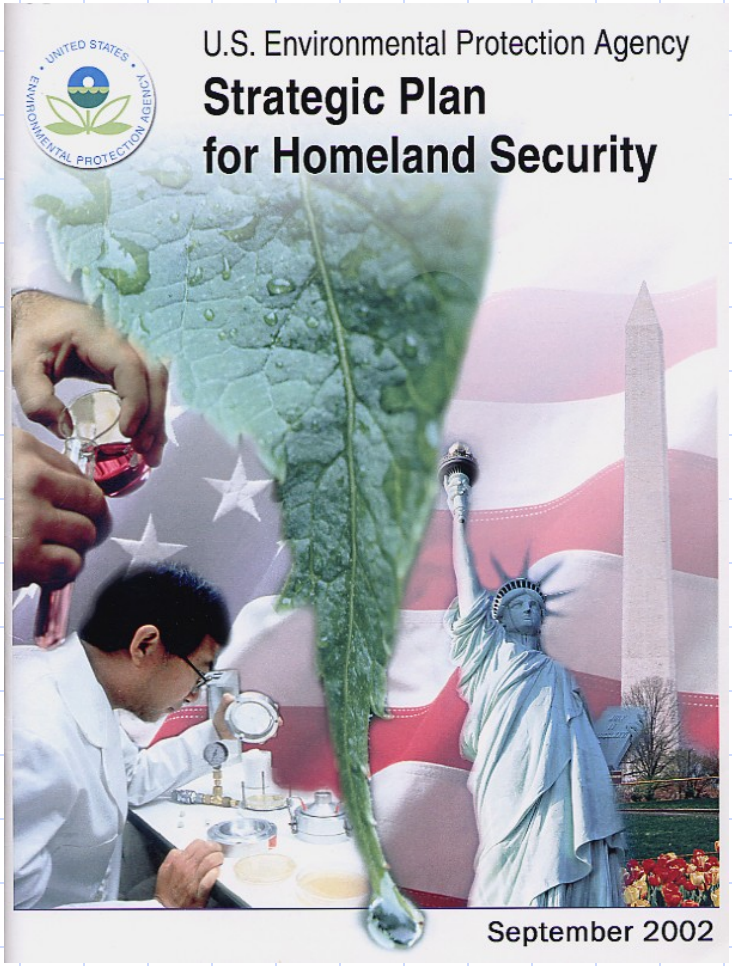
(3) clean up following chemical or biological attack

(4) reducing vulnerability of the chemical & hazardous materials sector

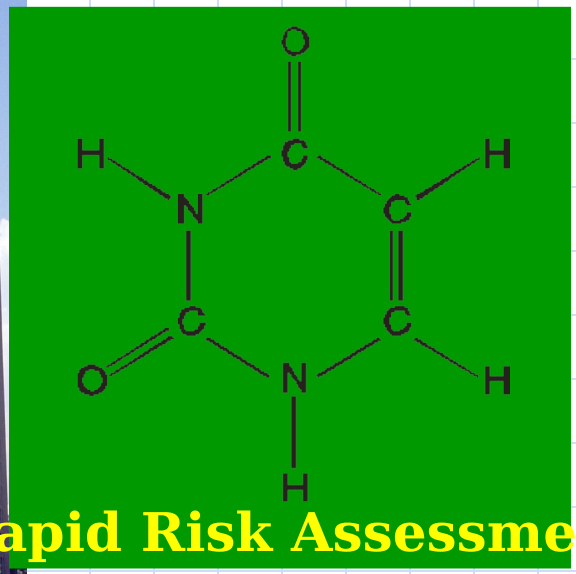
(5) research to protect water infrastructure & buildings

EPA Homeland Security Strategy

- Critical Infrastructure Protection
- Preparedness, Response & Recovery
- Communication and Information
- Protection of EPA Personnel and Infrastructure



EPA Homeland Security Research Program



Homeland Security Research Program Goal

Provide, within three years, appropriate, affordable, reliable, tested and effective technologies and guidance for preparedness, detection, containment, decontamination and risks of chemical and biological attacks on buildings and on water systems

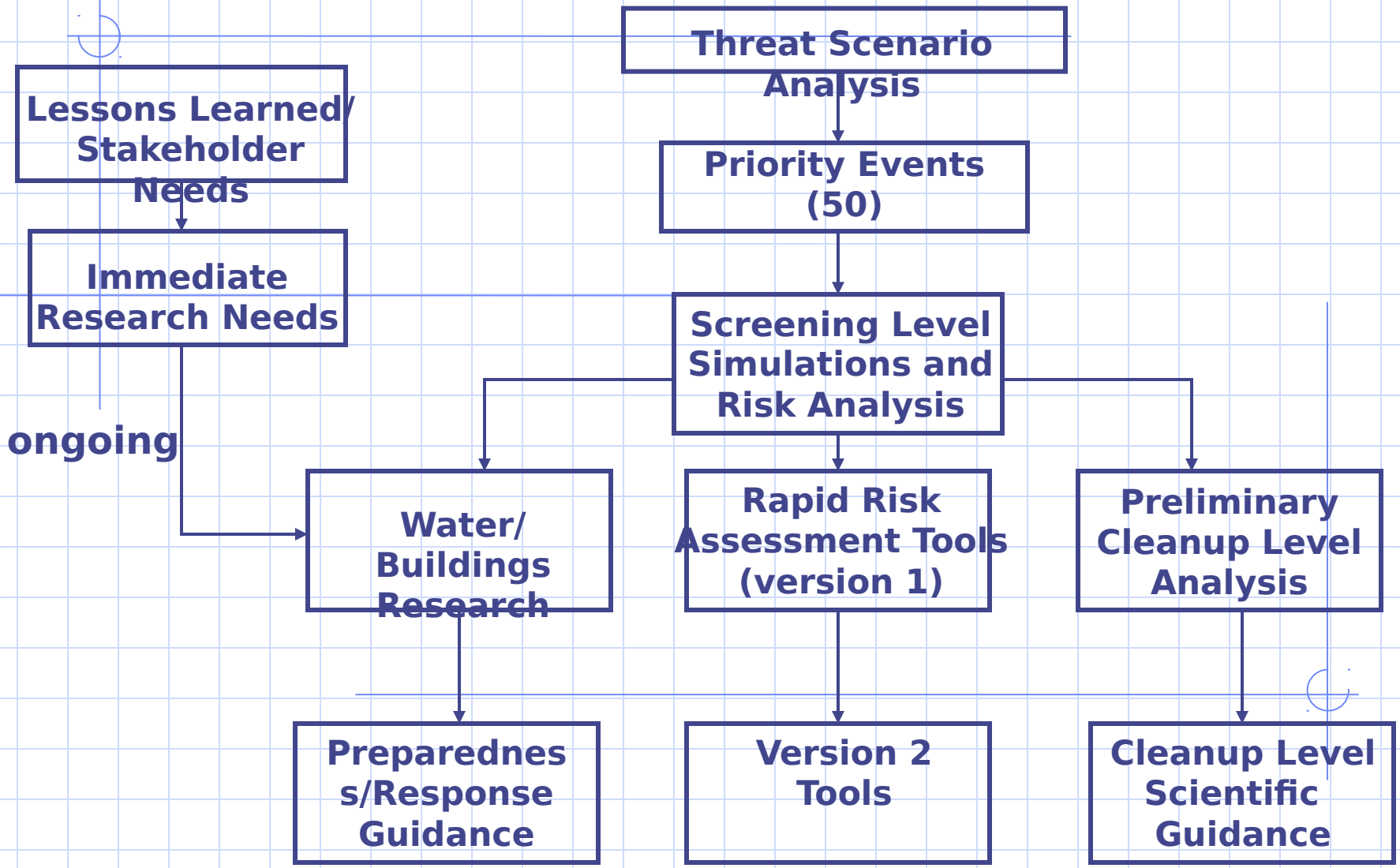
Research Program Scope

- Biological & Chemical Hazards
  - Pathogenic bacteria, viruses, bacterial toxins
  - Chemical warfare agents
  - Toxic Industrial Chemicals
- Radiologic contamination (water)
- Buildings and large structures
- Water Supply, treatment & distribution infrastructure
- Wastewater treatment and collection infrastructure
- Risk Assessment & Cleanup Guidance
- Commercial technology performance verification

Key Operating Principles

- Short-term, high intensity, applied effort
- Understand and focus on meeting user needs
- High quality, useful products, quickly
- Partnerships within ORD, EPA and with other agencies/private sector
- Target key knowledge gaps

Program Approach



Program Structure

- Characterization/Detection
  - Early warning, rapid screening, inform response
- Prevention/Containment
  - Protect responders, occupants, water users
  - Treat or isolate contaminants
- Decontamination/Mitigation
  - Efficacy, compatibility, cost, safety of methods
- Disposal of Residues
  - Packaging, transport, treatment, destruction/disposal

Program Structure (continued)

- Risk Assessment
  - Information systems, tools, models, data
  - Prospective risk assessments, AEGLs
  - Risk communication
- Technology Verification
  - 5 expanded ETV Centers
    detection, decontamination, filtration,
    drinking water, water treatment
- Technical Assistance/Technology Transfer
  - Emergency technical assistance
  - User guidance, information systems, transfer

Characterization/Detection Research

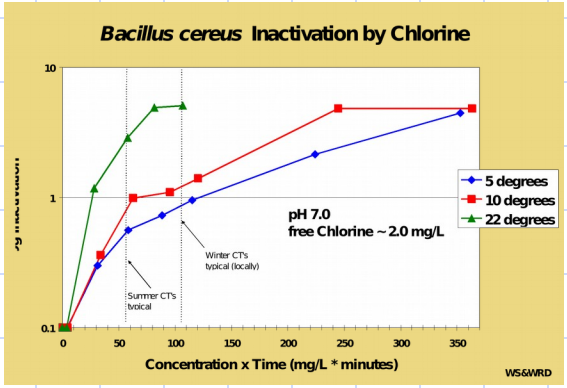
- Improved Anthrax S & A methods (Aug. ’03)

- Screening protocol for water contaminants (Aug. ’03)

- Bioconcentration methods for water (Sept. ’03)

Containment Research

- Water treatment efficacy studies (Sept. ’03)



Evaluation of residential safe haven effectiveness (Aug. ’03)

- Distribution system fate & transport field studies and simulations (June ’03)

Decontamination/Disposal Research

- Fumigant efficacy protocols (Aug. ’03)
- Fumigant performance studies (Oct. ’03 – Dec. ’04)

- Technical guidance on incineration of decon materials (Nov. ’03)

Rapid Risk Assessment Research

- PC-based rapid risk assessment tool (Dec. ’03)

- Threat scenario simulations and screening level risk analyses (Sept. ’03)

Technology Verification

- 5 verification centers
  - Advanced monitoring
  - Water treatment
  - Containment/filtration
  - Decontamination
  - Wastewater
- 5 water/cyanide detector verifications completed
- Building filtration, water toxicity, decon technologies underway